

Title (en)
Process for manufacturing SOI structures

Title (de)
Verfahren zur Herstellung von SOI-Strukturen

Title (fr)
Procédé de fabrication de structures SOI

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EP 1326272 A1 20030709 (EN)

Application
EP 01830822 A 20011228

Priority
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Abstract (en)
For manufacturing an SOI substrate, the following steps are carried out: providing a wafer (1) of semiconductor material; forming, inside the wafer, a plurality of passages forming a labyrinthine cavity (9) and laterally delimiting a plurality of pillars of semiconductor material (10); and oxidizing the pillars of semiconductor material to form a buried insulating layer. For forming the labyrinthine cavity, a trench is first formed in a substrate (2); an epitaxial layer (11) is grown, which closes the trench at the top; the wafer is annealed so as to deform the pillars and cause them to assume a minimum-energy handlebar-like shape; and a peripheral portion of the wafer is removed to reach the labyrinthine cavity, and side inlet openings (13a) are formed in the labyrinthine cavity. Oxidation is performed by feeding an oxidizing fluid through the side inlet openings (13a). <IMAGE> <IMAGE>

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IPC 8 full level
H01L 21/762 (2006.01); **H01L 21/316** (2006.01)

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Citation (search report)
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• [A] US 5804491 A 19980908 - AHN DONG-HO [KR]
• [DYA] SATO T ET AL: "A NEW SUBSTRATE ENGINEERING FOR THE FORMATION OF EMPTY SPACE IN SILICON (ESS) INDUCED BY SILICON SURFACE MIGRATION", INTERNATIONAL ELECTRON DEVICES MEETING 1999. IEDM. TECHNICAL DIGEST. WASHINGTON, DC, DEC. 5 - 8, 1999, NEW YORK, NY: IEEE, US, 1 August 2000 (2000-08-01), pages 517 - 520, XP000933241, ISBN: 0-7803-5411-7

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